

# Managing a patient with a sport-related concussion

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Family physicians have an important role to play in the assessment and management of concussions.<sup>1</sup> Following the 2017 publication of the 5th International Conference on Concussion in Sport consensus statement,<sup>2</sup> this article outlines the role of family physicians and provides practical tips during 3 stages of concussion care: the initial visit, the return-to-play (RTP) recommendation, and the assessment of persistent symptoms.

## Care of sport-related concussion

**Initial visit.** The primary determinant leading to the assessment of a possible concussion is the detection of this condition in the community. Therefore, it is important that family physicians be aware of and use the most recent tools (eg, the CRT5 [Concussion Recognition Tool, 5th edition]).<sup>1,2</sup>

For the initial assessment, the SCAT5 (the Sports Concussion Assessment Tool, 5th edition) can be used.<sup>2</sup> A critical aspect of this assessment is to exclude more severe forms of traumatic brain injuries and conditions that can be associated with (eg, cervical injuries) or mimic (eg, migraine) a concussion. Because there is no objective diagnostic test yet, the diagnosis of concussion is still made by exclusion. Amnesia, loss of consciousness, or an altered Glasgow Coma Scale score are not required to diagnose a concussion.

Every assessment must document the nature and severity of every symptom of a concussion (section 2 of SCAT5), as, beyond the initial few days after the injury, symptom assessment is recognized as the most valuable way to track recovery.<sup>2</sup>

Once the diagnosis of concussion has been made, counseling about removal from activities that carry risk of further injuries, initial rest, and gradual return to cognitive and physical activity should be provided—as described in the *Canadian Guideline on Concussion in Sport*.<sup>3</sup>

**Return-to-play recommendation.** Box 1<sup>2,3</sup> summarizes the fundamental considerations for making an RTP recommendation. The first 3 considerations evaluate the resolution of symptoms and whether the progressive return to cognitive and physical activity has been successful, leading up to the stage when an RTP can be recommended.<sup>2,3</sup> At this stage, the clinical examination findings should also be normal.

The final factors to consider when making an RTP recommendation include the patient's age, other health conditions, and personal history of concussion, and any contextual factors that might raise a doubt about the information obtained regarding recovery. A more

### Box 1. Considerations for an RTP recommendation

To make an RTP recommendation, determine the following:

- Have all the symptoms that suggested the presence of a concussion resolved?
- Was a complete and unrestricted return to normal cognitive activity achieved without symptoms?
- Were vigorous endurance and resistance physical activities performed without symptoms?
- Did the clinical examination findings confirm a normal cervical spine and neurologic status?
- Is there a health condition, a previous concussion, or a context that could justify an additional delay?

RTP—return to play.

Data from McCrory et al<sup>2</sup> and Parachute.<sup>3</sup>

conservative recommendation can be considered for minors (younger than age 18), especially in the presence of comorbidities such as migraines, attention deficit disorder, or a previous history of concussion. For patients with a history of concussion, having a short interval between injuries (eg, the same season), increasing recovery time, or lowering injury threshold should lead to more conservative recommendations.

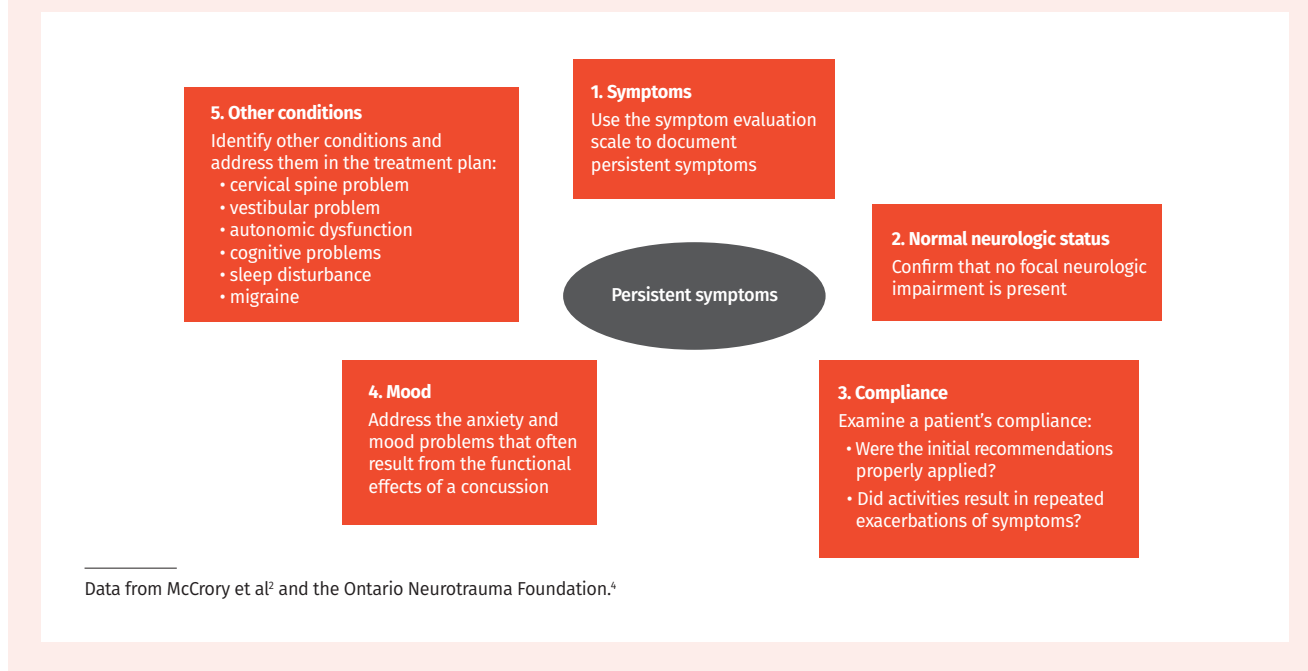
Finally, external and self-imposed pressure to RTP can lead patients to deny or mask their symptoms. Education regarding the risk of dramatic complications and chronic consequences following premature RTP will help avoid such behaviour. Ultimately, if there remains a doubt about the validity of the information obtained, RTP should be delayed.

**Assessment of persistent symptoms.** Most concussions will evolve favourably within a few days to a few weeks. Persistent symptoms have been defined as those lasting more than 2 weeks for adults and more than 4 weeks for children and adolescents.<sup>2</sup> These criteria can be used to provide timely access for re-assessment.

The assessment should include a formal symptom evaluation to better qualify and quantify the persistence of symptoms (Figure 1).<sup>2,4</sup> A normal neurologic status should also be documented. The patient's compliance with the initial recommendations should be verified, as repeated exacerbation of symptoms due to premature increase of cognitive or physical demand is a frequent finding that can contribute to persistent symptoms.

The impaired functional status that results from a concussion is an important source of anxiety that can lead to depressive symptoms. These should be assessed and addressed as soon as possible, and education about

**Figure 1. Factors to consider when assessing a patient's persistent symptoms**



the natural course of most concussions can go a long way in alleviating anxiety.

The assessment should also focus on the identification of conditions that can contribute to persistent symptoms.<sup>2-4</sup> Cervical spine injuries can result in cervicogenic headaches or balance problems. Vestibular or oculomotor problems can generate dizziness, balance problems, or visual symptoms. Autonomic dysfunction can result in exercise intolerance. These conditions should be identified because they can benefit from rehabilitation strategies.<sup>2</sup> Cognitive complaints (eg, poor concentration, mental fatigue), sleep disturbance, and posttraumatic migraines should also be recognized and addressed as part of an individualized treatment plan.

In complex or atypical situations, a referral to a colleague with a Certificate of Added Competence in Sport and Exercise Medicine or to a clinic that offers properly structured concussion care should be considered.<sup>5</sup>

## Conclusion

As a family physician, using a structured approach during these 3 stages of concussion care allows me to safely manage most concussions and initiate the multidisciplinary management of the more complex cases. 🍀

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## Competing interests

None declared

## References

1. College of Family Physicians of Canada, Canadian Academy of Sport and Exercise Medicine. *Joint position statement: the role of family physicians and physicians with added competencies in sport and exercise medicine in a public health approach to concussions*. Mississauga, ON: College of Family Physicians of Canada; 2017. Available from: [www.cfpc.ca/Concussions\\_Position\\_Statement/](http://www.cfpc.ca/Concussions_Position_Statement/). Accessed 2019 Jan 15.
2. McCrory P, Meeuwisse W, Dvořák J, Aubry M, Bailes J, Broglio S, et al. Consensus statement on concussion in sport—the 5th International Conference on Concussion in Sport held in Berlin, October 2016. *Br J Sports Med* 2017;51(11):838-47. Epub 2017 Apr 26. Available from: <https://bjsm.bmj.com/content/bjsports/51/11/838.full.pdf>. Accessed 2019 Jan 15.
3. Parachute. *Canadian guideline on concussion in sport*. Toronto, ON: Parachute; 2017. Available from: [www.parachutecanada.org/injury-topics/item/canadian-guideline-on-concussion-in-sport](http://www.parachutecanada.org/injury-topics/item/canadian-guideline-on-concussion-in-sport). Accessed 2019 Feb 5.
4. Ontario Neurotrauma Foundation. *Guideline for concussion/mild traumatic brain injury and persistent symptoms*. 3rd ed. Toronto, ON: Ontario Neurotrauma Foundation; 2018. Available from: <http://braininjuryguidelines.org/concussion/>. Accessed 2019 Jan 15.
5. Canadian Concussion Collaborative. *Four characteristics of a good concussion clinic*. Ottawa, ON: Canadian Concussion Collaborative; 2017. Available from: <https://casem-acmse.org/wp-content/uploads/2018/06/CCES-PUB-CCC-4Qs-E-FINAL.pdf>. Accessed 2019 Feb 5.

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This article has been peer reviewed. *Can Fam Physician* 2019;65:198-9

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